ZOOLOGY.—*On the Newport chilopod genera.* Ralph E. Crabill, Jr., U. S. National Museum.

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There is a curious parallel between the work of William E. Leach and George Newport in England and that of Horatio C. Wood and Charles H. Bollman in the United States. The earlier pair, Leach and Wood, forged the initial shadowy framework within which the later men, Newport and Bollman, were to refine, to rearrange, and magnify in a flurry of short-lived activity. Probably the comparison should not be extended too far, though finally it is tempting to recall that each of the later men died prematurely and, one might say, as a result of his zoological interests, Bollman of malaria, in 1899, in Georgia while engaged in field work, and Newport in 1854 of a fever contracted while collecting specimens in winter.

As was Wood in America, so was George Newport the first outstanding monographist of the Myriapoda in England. And this is odd, for apparently each was primarily interested in something other than myriapods, Wood in botany, and Newport in insect physiology and amphibian embryology. Each fell prey to a brief, intense infatuation with myriapod systematics, and then each turned again abruptly to other interests. For some elusive reason the myriapods have had many such transient amours, though not all were happy, fruitful unions by any means.

Newport's reëvaluation of the higher chilopod categories, his presentation of new species drawn from remote parts of the world, and particularly his recognition of a number of new genera all served to establish the faint lines of a firmer categorical fabric than had existed previously. The handful of genera proposed by Linnaeus, Lamarck, Latreille, and Leach before him had been born of an undeniable novelty and preserved by little more than their youth in a generic void.

The Newport genera are important. They have lent themselves to three family and two subfamily names; many of their species are the most familiar chilopods in various parts of the world. Because details of publication have often been misrepresented in the literature,[1] and especially because the identity of the type species, and hence the content of these genera, seem to have received an often indifferent attention, it is desirable to review them.

Arthronomalus, 1844. (*10*, p. 193. Proposed without mention of included species.) Newport proposed a number of genera without stating specifically which species each should include. However, none of these is a *nomen nudum*, for each was accompanied by a brief key-diagnosis. The first species were assigned to *Arthronomalus* by Newport in 1845 (*12*, p. 430). Seven in number, they included *Geophilus longicornis* Leach, 1815, which was subsequently designated the genotype by O. F. Cook in 1895 (*3*, p. 74).

Apparently Newport distinguished between *Arthronomalus* and *Geophilus* chiefly on the basis of cephalic proportions and shape,[2] a practice which neither was unique to him nor was to stop with him, for as late as the 1880's Jerome McNeill and C. H. Bollman utilized often the same criteria in other geophilomorph categories. It was not until the mandibular and maxillary criteria had been disclosed that any real insight into the higher categories was gained.

Since the genotype of *Arthronomalus* today is regarded as a congener of *electricus* Linné, 1758, the type species of *Geophilus* Leach, 1814, the two are subjective synonyms, *Geophilus* of course having priority.

Branchiostoma, 1845. (*12*, p. 411. Proposed with four species.) This genus is the junior homonym of *Branchiostoma* Costa, which was proposed in 1834 for the reception of a cephalochordate. In 1893 Bollman suggested that *Rhysida* Wood, 1862, ought to be used instead (*1*, p. 171).

[1] In this connection I am deeply indebted to Mr. Francis Hemming, secretary of the International Commission on Zoological Nomenclature, for his generous assistance in discovering the true dates of publication of the 1844 and 1845 works. See References *10*, *11*, and *12*.)

[2] Viz, *Arthronomalus*, "Segmentum cephalicum subquadraticum, angulis rotundatis," as against *Geophilus*, "Segmentum cephalicum parvum, breve, subtriangulare, antice angustatum, postice dilatatum transversum. . . ."

Cormocephalus, 1844. (*10*, p. 193. Proposed without mention of included species.) In 1845 Newport assigned the first 13 species to his genus (*12*, p. 419). Of these, *rubriceps* was subsequently designated genotype by Pocock in 1891 (*13*, p. 229).

Gonibregmatus, 1843. (*8*, p. 180. Proposed with one species.) Only *cumingii* Newport was originally included in the genus; it is therefore the genotype by monotypy.

Henicops, 1844. (*10*, p. 192. Proposed without mention of included species.) Newport redescribed the genus in 1845 (*12*, p. 372), adding two new species, one of which was *maculatus*. Pocock subsequently designated this the genotype in 1901 (*14*, p. 451).

Heterostoma, 1844. (*10*, p. 193. Proposed without mention of included species.) The Newport name was preoccupied by an 1837 trematode genus, *Heterostoma* De Filippi. Many of the species assigned the Newport genus, today are referred to *Ethmostigmus* Pocock.

Mecistocephalus, 1843. (*8*, pp. 177, 178. Proposed with five species.) One of the initial inclusions, *punctifrons*, was subsequently designated genotype by R. V. Chamberlin in 1914 (*2*, p. 61). O. F. Cook's action of 1895, the selection of *Geophilus attenuatus* Say, 1821, as the type, is of course invalid, inasmuch as this name was not among those originally referred to the genus. It seems clear from this that Cook did not regard it important that a genotype be a charter member of a genus.

His paper of 1895 bears careful study. First, he reasoned that Say's nebulous *attenuatus* could not be *Geophilus* (=*Arenophilus*) *bipuncticeps* Wood, 1862, as Bollman had believed, and then that the Say species must be conspecific both with *Pachymerium ferrugineum* (C. L. Koch), 1847 and with *Geophilus* (=*Arcuogephilus*) *fulvus* (Wood), 1862. Actually, in lieu of the type, and working only from the original description, no one can be certain today of the identity of the Say species. I am inclined to agree with Bollman's point of view, to equate it provisionally with *bipuncticeps*.

Next, having decided that *attenuatus*, *ferrugineum*, and *fulvus* were all conspecific, and that the first should be the genotype of *Mecistocephalus*, Cook attempted to resolve the matter in the following way, "This disposition leaves the species hitherto called *Mecistocephalus* in need of a generic name . . . ," thereupon presenting as new *Dicellophilus*, *Lamnonyx*, and *Megethmus*.

Necrophloeophagus, 1843. (*8*, pp. 178, 180. Proposed as a subgenus of *Geophilus*, with one species.) Originally Newport included a single species, *longicornis* Leach, 1815, within *Necrophloeophagus*; therefore the genus is monobasic, and *longicornis* is its type.

Inasmuch as the same species is also the type of *Arthronomalus* (q.v.), the two genera are objective synonyms, *Necrophlocophagus* having priority. In addition, their genotype presently is considered congeneric with that of *Geophilus*, so that they are junior subjective synonyms of the Leach genus.[3]

I am not altogether convinced that *longicornis* and *electricus* belong in the same subgenus, for the former exhibits certain features that are more reminiscent of, say, *Arenophilus* spp. or even of the American *Geophilus varians* McNeill than of a typical *Geophilus*. I believe that a subgeneric division of *Geophilus* is feasible, but only desirable if it can be based upon the known world fauna, rather than upon the extremes of a restricted fauna which seems to characterize the attempts to date. Such a revision probably would involve a subgeneric distinction between *longicornis* and *electricus* in which *Necrophloeophagus* would be available for use.

Rhombocephalus, 1844. (*10*, p. 193. Proposed without mention of included species.) The earliest assignment of species to this genus was that of 1845 (*12*, p. 425, 426), when its author described the following as new: *viridifrons*, *gambiae*, *parvus*, *politus*, and *brevis*. As usual, none was selected as type. At different times toward the end of the century Pocock states *Scolopendra cingulata* Latreille, 1829, or *S. morsitans* Linné, 1758, to be the genotype. But since neither of these names was among those first assigned the genus in 1845, neither was available for subsequent designation (see Bull. Zool. Nomencl., **4**: 179–180, 1950, Concl. 69 (3) (a); p. 348, Concl. 31 (b)). Therefore I designate *Rhombocephalus viridifrons* Newport as the type-species, and inasmuch as *viridifrons* (=*cingulata*) is congeneric with the type of *Scolopendra*, i.e. *morsitans* Linné, the Newport genus becomes a junior subjective synonym of the Linnaean.

[3] The year of the proposal of *Geophilus* is generally given incorrectly, as is the identity of its true genotype (which is not *carpophagus* Leach, 1815). The genus was first presented in the obscure Brewster's Edinburgh Encyclopaedia of 1814 (5, p. 409) and originally included only *Scotopendra* (=*Geophitus*) *electrica* Linné, 1758, which is thus its type species by monotypy.

Scolopocryptops, 1844. (*11*, p. 275. Proposed without included species.) In 1845 the first five species were assigned the genus by Newport (*12*, p. 405), and according to the present regulations of the I.C.Z.N. (see reference above under *Rhombocephalus*), the type would have to be selected from that group. The earliest designation of a genotype was accordingly that of Lucas in 1849 (*7*, p. 444). His choice was *Scolopocryptops melanostoma* Newport, 1845, which means that since this species is congeneric with *sexspinosa* Say, 1821, and with *rubiginosa* L. Koch, 1878, all must bear the Newport name (and not that of its junior synonym *Otocryptops* Haase, 1887). From this it also follows that *miersii* Newport and its congeners required a new name, to which end *Dinocryptops* Crabill was proposed in 1953 (*4*, p. 96).

Theatops, 1844. (*10*, p. 193. Proposed without mention of included species.) Newport relegated the first species to *Theatops* in 1845 (*12*, p. 409). His action fixed *Cryptops postica* Say, 1821, automatically as the type-species (by subsequent monotypy).

Following is a nomenclatorial abstract of the foregoing: for details of pagination, etc., see the preceding discussions.

Arthronomalus, 1844. (*10*, p. 193.) [=*Geophilus* Leach, 1814.]
Genotype: *Geophilus longicornis* Leach, 1815.
Fixation: By subsequent designation of Cook, 1895.

Branchiostoma, 1845. (*12*, p. 411.)
A junior homonym of *Branchiostoma* Costa (Cephalochordata); replaced by *Rhysida* Wood, 1862.

Cormocephalus, 1844. (*10*, p. 193.)
Genotype: *Cormocephalus rubriceps* Newport, 1845.
Fixation: By subsequent designation of Pocock, 1891.

Geophilus Leach, 1814. (*5*, p. 409.)
Genotype: *Scolopendra* (=*Geophilus*) *electrica* Linné, 1758.
Fixation: Monotypy.

Gonibregmatus, 1843. (*8*, p. 180.)
Genotype: *Gonibregmatus cumingii* Newport, 1843.
Fixation: Monotypy.

Henicops, 1844. (*10*, p. 192.)
Genotype: *Henicops maculatus* Newport, 1845.
Fixation: By subsequent designation of Pocock, 1901.

Heterostoma, 1844. (*10*, p. 193.)
A junior homonym of *Heterostoma* De Filippi (Trematoda); replaced in part by *Ethmostigmus* Pocock, 1891.

Mecistocephalus, 1843. (*8*, pp. 177, 178.)
Genotype: *Mecistocephalus punctifrons* Newport, 1843.
Fixation: By subsequent designation of Chamberlin, 1914.

Necrophloeophagus, 1843. (*8*, pp. 178, 180.) [=*Geophilus* Leach, 1814.]
Genotype: *Geophilus longicornis* Leach, 1815.
Fixation: Monotypy.

Rhombocephalus, 1844. (*10*, p. 193.) [=*Scolopendra* Linné, 1758.]
Genotype: *Rhombocephalus viridifrons* Newport, 1845.
Fixation: By present designation.

Scolopocryptops, 1844. (*11*, p. 275.)
Genotype: *Scolopocryptops melanostoma* Newport, 1845.
Fixation: By subsequent designation of Lucas, 1849.

Theatops, 1844. (*10*, p. 193.)
Genotype: *Cryptops postica* Say, 1821. [=*Theatops postica* (Say).]
Fixation: By subsequent monotypy.

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(12) ———. Trans. Linn. Soc. London **19:** 349–439. 1845. [According to the librarian of the Linnaean Society, *fide* Hemming, volume 19, nominally of 1845, was in fact issued as follows: Part I, pp. 1–80, 1842; Part II, pp. 81–170, 1843; Part III, pp. 171–302, 1844; Part IV, pp. 303–537, 1845.]

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